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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,800	06/02/2001	Takashi Niwa	S004-4309	4146

7590 08/11/2005

ADAMS & WILKS  
ATTORNEY AND COUNSELORS AT LAW  
31ST FLOOR  
50 BROADWAY  
NEW YORK, NY 10004

EXAMINER

TRAN, THANG V

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/872,800

**Applicant(s)**

NIWA ET AL.

**Examiner**

Thang V. Tran

**Art Unit**

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-28, 34-37 and 45-48 is/are allowed.
- 6) ☒ Claim(s) 29-33 and 38-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The amendment dated 11/22/04 has been considered with the following results:

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 29 is rejected under 35 U.S.C. 102(b) as being anticipated by Bednorz et al (US 4,684,206) of record.

Bednorz et al., according to Fig. 5, discloses a near-field optical head comprising: a sharpened tip (2) having an aperture (28) at a front end thereof; and an opaque film (6) covering the sharpened tip (2) and having a plastically deformed portion (see column 4, lines 42-48) in the vicinity of the optical aperture (28).

3. Claims 38-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Ito et al (US 6,304,527) of record.

Regarding claim 38, see Figs. 1B, 7B, 8B and 12 of Ito et al which discloses an information recording/reading apparatus (see Fig. 12) for recording/reading information utilizing near-field light comprising: a recording medium (43); a near-field optical head (see Fig. 1B, 7B or 8B) comprises a conical shaped tip (4) for transmitting light (8) having a preselected wavelength and an opaque film (5) covering the tip (4) having an optical aperture (see aperture 29 in Fig. 5) at the front end thereof confronting the recording medium; aperture formation

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controlling means (pad 2) disposed in the vicinity of the tip (4) of the near-field optical head for controlling formation of the optical aperture at the front end of the tip (see Fig. 1B and column 4, line 54 to column 5, line 22).

Regarding claim 39, see the height of the tip (4) and stopper (pad 2) as shown in Fig. 1B.

Regarding claims 40-42 and 44, see pads 2 in Fig. 1 which are interpreted as a distance control means.

Regarding claims 44 and 43, see column 1, lines 12-36 in which Ito et al also recognizes the use of air bearing surfaces and a piezoelectric actuator as a distance control means recited in claim 41 and 43 respectively.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al (US 6,304,527) in view of Bednorz et al (US 4,684,206).

Ito et al., according to Figs. 1B, 5, 7B and 8B, discloses a near-field optical head comprising: a sharpened tip (4) having an aperture (29) at a front end thereof; and an opaque film (5 or 28) covering the sharpened tip (4). However, Ito et al fails to teach the use of an opaque film for covering the sharpened tip having a plastically deformed portion in vicinity of the optical aperture. Bednors et al., according to Figs. 5 and 7, teaches the use of the opaque

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film (6) for covering the sharpened tip (2) having a plastically deformed portion (see column 4, lines 42-48) in the vicinity of the optical aperture (28) for the purpose of obtaining an optical aperture with a smaller diameter aperture in order to improve the storage density of the recording medium. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the near-field optical head of Ito et al, based on the teaching of Bednorz et al, by providing the opaque film for covering the sharpened tip having a plastically deformed portion in the vicinity of the optical aperture in order to obtain an optical aperture with a smaller diameter aperture thereby to improve the storage density of the recording medium as suggested by Bednorz et al.

Regarding claim 30, see pads 2 in Fig. 1B of Ito et al. as stopper having a height substantially equal to a height of the tip.

Regarding claim 31, see material of pad 2 and tip 4 shown in Fig. 1B, 7B or 8B of Ito et al.

Regarding claim 32, see the distance relative to the heights  $h$  and  $h'$  of the pad and probe 4 shown in Fig. 1B.

Regarding claim 33, see Fig. 5 of Bednorz et al.

***Allowable Subject Matter***

6. Claims 21-28, 34-37 and 45-47 are allowed over the prior art of record because the prior art of record, considered in combination or individually, fails to suggest or fairly teach a method for producing or fabricating a near-field optical head including a combination of all functional steps as particularly recited in each of claims 21, 26, 34 and 45. Claims 22-25, 27, 28, 35-37 and 46-48 are allowed with their respective parent claim.

*Response to Arguments*

7. Applicant's arguments with respect to claimed invention have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

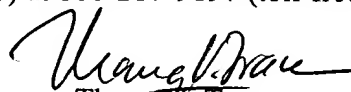
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thang V. Tran whose telephone number is (571) 272-7595. The examiner can normally be reached on M-F 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thang V. Tran  
Primary Examiner  
Art Unit 2653